Claims

1. Evaporated fuel processing device, in particular for an internal combustion engine of an automotive vehicle, comprising:

a tank port and an atmospheric port;

a first adsorbent chamber between said tank port and said atmospheric port, said first adsorbent chamber being filled with an adsorbent material; and

a volume compensator for compacting said adsorbent material in said first adsorbent chamber,

wherein said volume compensator comprises:

a base;

a compacting plate; and

a spring arranged between said base and said first compacting plate,

characterized by

resilient connecting means connecting said compacting plate to said base, said resilient connecting means being formed in one piece with said compacting plate and said base and said resilient connecting means being arranged such that said spring can be inserted between said base and said first compacting plate.

2. Evaporated fuel processing device according to claim 1, wherein said resilient connecting means comprises first and second resilient bands, said first and second resilient bands being diametrically arranged in a peripheral zone of said compacting plate.

3. Evaporated fuel processing device according to claim 2, wherein said resilient connecting means comprises a third resilient band, said

third resilient band being arranged between said first and second resilient bands in said peripheral of said compacting plate.

4. Evaporated fuel processing device according to claim 2, wherein said resilient bands have larger width than thickness.

5. Evaporated fuel processing device according to any of claims 2, wherein said resilient bands have zigzagged or curved profile.

6. Evaporated fuel processing device according to claim 1, wherein said base comprises a first receiving portion for receiving said spring.

7. Evaporated fuel processing device according to claim 6, wherein said compacting plate comprises a second receiving portion for receiving said spring.

8. Evaporated fuel processing device according to claim 7, wherein

said receiving portions protrude into an area between said base and said compacting plate, and

said receiving portions have a cross-section substantially corresponding to the inner cross-section of said spring.

9. Evaporated fuel processing device according to claim 7, wherein

said receiving portions are formed by a recess arranged in said base and said compacting plate respectively, and

said receiving portions have a cross-section substantially corresponding to the outer cross-section of said spring.

10. Evaporated fuel processing device according to claim 7, wherein

said first receiving portion is formed in one piece with said base, and

said second receiving portion is formed in one piece with said compacting plate.

11. Evaporated fuel processing device according to claim 1, further comprising:

a second adsorbent chamber arranged between said first adsorbent chamber and said atmospheric port, said second adsorbent chamber being filled with an adsorbent material;

wherein said volume compensator comprises:

a first compacting plate associated with a first spring for compacting said adsorbent material in said first adsorbent chamber, and

a second compacting plate associated with a second spring for compacting said adsorbent material in said second adsorbent chamber.

12. Evaporated fuel processing device according to claim 11, wherein said volume compensator is fluidly arranged between said first and second adsorbent chambers, said volume compensator defining a compensator chamber, and

said first and second compacting plates comprising passages having a cross-section allowing an air/fuel vapor mixture to pass through said passages but preventing said adsorbent material to pass through said passages.

13. Evaporated fuel processing device according to claim 11, further comprising

a third adsorbent chamber arranged between said second adsorbent chamber and said atmospheric port, said third adsorbent chamber being filled with an adsorbent material,

wherein said evaporated fuel processing device comprises a further volume compensator for compacting said adsorbent material in said third adsorbent chamber.

14. Evaporated fuel processing device according to claim 1, wherein said adsorbent material comprises activated carbon.

15. Evaporated fuel processing device according to claim 1, further comprising a purge port connected to said first adsorbent chamber.